Claim Amendments:

1. (Original) A composition comprising at least one anti-CEA monoclonal antibody (MAb) or fragment thereof and at least one therapeutic agent.

2. (Currently Amended) The composition of claim 1, wherein said anti-CEA MAb is a Class I, Class II or Class ~~II~~ III anti-CEA MAb.

3. (Currently Amended) The composition of claim 1, wherein said anti-CEA MAb is a Class I or Class II anti-CEA ~~Mab~~ MAb which is reactive with granulocytes and is a monovalent form of the MAb.

4. (Currently Amended) The composition of claim 1, wherein said anti-CEA MAb or fragment thereof is humanized, chimeric or fully human, wherein said humanized, chimeric or fully human MAb retains substantially the anti-CEA binding specificity of a murine anti-CEA MAb.

5. (Original) The composition of claim 1, wherein said anti-CEA MAb or fragment thereof reacts with CEA and is unreactive with normal cross-reactive antigen (NCA) and meconium antigen (MA).

6. (Previously presented) The composition of claim 5, wherein said anti-CEA MAb or fragment thereof is a humanized MN-14 antibody or fragment thereof comprising the complementarity-determining regions (CDRs) of a murine MN-14 monoclonal antibody, wherein the anti-CEA MAb comprises (1) the CDRs of the light chain variable region of said MN-14 antibody comprises CDR1 comprising the amino acid sequence KASQDVGTSVA (SEQ ID NO: 20); CDR2 comprising the amino acid sequence WTSTRHT (SEQ ID NO: 21); and CDR3 comprising the amino acid sequence QQYSLYRS (SEQ ID NO: 22); (2) the CDRs of the heavy chain variable region of said Class III anti-CEA antibody comprises CDR1 comprising TYWMS (SEQ ID NO: 23); CDR2 comprising EIHPDSSTINYAPSLKD (SEQ ID NO: 24); and CDR3 comprising LYFGFPWFAY (SEQ ID NO: 25) or the CDRs of both (1) and (2).

7. (Original) The composition of claim 6, wherein the framework regions (FRs) of the light and heavy chain variable regions of said humanized MN-14 antibody or fragment thereof comprise at least one amino acid substituted from the corresponding FRs of a murine MN-14 monoclonal

antibody.

8. (Original) The composition of claim 6, wherein said humanized MN-14 antibody or fragment thereof comprises at least one amino acid from said corresponding FR of said murine MN-14 light chain or heavy chain variable region.

9. (Original) The composition of claim 1, wherein said fragment is selected from the group consisting of F(ab')$_2$, Fab', Fab, Fv and scFv.

10. (Original) The composition of clai m 1, wherein said therapeutic agent is selected from the group consisting of a naked antibody, a cytotoxic agent, a drug, a radionuclide, an immunomodulator, a photoactive therapeutic agent, an immunoconjugate, a hormone, or a combination thereof, optionally formulated in a pharmaceutically acceptable vehicle.

11. (Currently Amended) The composition of claim 10, wherein said combination thereof comprises vincristine, doxorubicin, DTIC ~~and~~ or cyclophosphamide.

12. (Original) The composition of clai m 10, wherein said therapeutic agent is a naked antibody or an immunoconjugate.

13. (Currently Amended) The composition of claim 12, wherein said naked antibody or an antibody fragment of said immunoconjugate comprises a humanized, chimeric, human or murine monoclonal antibody or fragment thereof selected from the group consisting of a monoclonal antibody or fragment thereof reactive with EGP-1, EGP-2 (e.g., 17-1A), MUC-1, MUC-2, MUC-3, MUC-4, PAM-4, KC4, TAG-72, EGFR, ~~EGP-b 2,~~ HER2/neu, BrE3, Le-Y, A3, A33, Ep-CAM, AFP, Tn, Thomson-Friedenreich antigens, tumor necrosis antigens, VEGF, IL-6, insulin-like growth factor, placenta growth factor or other tumor angiogenesis antigens, Ga 733, tenascin, fibronectin or a combination thereof.

14. (Original) The composition o f claim 13, wherein said fragment is selected from the group consisting of F(ab')$_2$, Fab', Fab, Fv and scFv.

15. (Original) The composition of clai m 1, wherein said therapeutic agent is not DTIC.

16. (Original) A method for tre ating non-medullary thyroid carcinoma comprising administering to a subject, either concurrently or sequentially, a therapeutically effective amount of an anti-CEA antibody or fragment thereof and at least one therapeutic agent, and optionally formulated in a pharmaceutically acceptable vehicle.

17. (Original) The method of claim 16, wherein said anti-CEA MAb is a Class I, Class II or Class III anti-CEA MAb.

18. (Currently Amended) The method of claim 16, wherein said anti-CEA MAb is a Class I or Class II anti-CEA ~~Mab~~ MAb which is reactive with granulocytes and is a monovalent form of the MAb.

19. (Currently Amended) The method of claim 16, wherein said anti-CEA MAb or fragment thereof is humanized, chimeric or fully human wherein said humanized, chimeric or fully human MAb retains substantially the anti-CEA binding specificity of a murine anti-CEA MAb.

20. (Original) The method of claim 16, wherein said anti-CEA MAb or fragment thereof reacts with CEA and is unreactive with normal cross-reactive antigen (NCA) and meconium antigen (MA).

21. (Previously presented) The method of claim 16, wherein said anti-CEA MAb or fragment thereof is a humanized MN-14 antibody or fragment thereof comprising the complementarity-determining regions (CDRs) of a murine MN-14 monoclonal antibody, wherein the anti-CEA MAb comprises (1) the CDRs of the light chain variable region of said MN-14 antibody comprises CDR1 comprising the amino acid sequence KASQDVGTSVA (SEQ ID NO: 20); CDR2 comprising the amino acid sequence WTSTRHT (SEQ ID NO: 21); and CDR3 comprising the amino acid sequence QQYSLYRS (SEQ ID NO: 22); (2) the CDRs of the heavy chain variable region of said Class III anti-CEA antibody comprises CDR1 comprising TYWMS (SEQ ID NO: 23); CDR2 comprising EIHPDSSTINYAPSLKD (SEQ ID NO: 24); and CDR3 comprising LYFGFPWFAY (SEQ ID NO: 25) or the CDRs of both (1) and (2).

22. (Original) The method of claim 21, wherein the framework regions (FRs) of the light and heavy

chain variable regions of said humanized MN-14 antibody or fragment thereof comprises at least one amino acid substituted from the corresponding FRs of a murine MN-14 monoclonal antibody.

23. (Original) The method of claim 22, wherein said humanized MN-14 antibody or fragment thereof comprises at least one amino acid from said corresponding FR of said murine MN-14 light chain or heavy chain variable region.

24. (Original) The method of claim 16, wherein said fragment is selected from the group consisting of $F(ab')_2$, Fab', Fab, Fv and scFv.

25. (Original) The method of claim 16, wherein said therapeutic agent is selected from the group consisting of humanized, chimeric, human or murine monoclonal antibody or fragment thereof selected from the group consisting of a Class I anti-CEA monoclonal antibody, Class II anti-CEA monoclonal antibody, Class III anti-CEA monoclonal antibody, and a fragment thereof, and is administered either concurrently or sequentially in a therapeutically effective amount.

26. (Original) The method of claim 25, wherein said therapeutic agent is either a naked antibody or an antibody conjugated to another therapeutic agent.

27. (Currently Amended) The method of claim 16, wherein said therapeutic agent is selected from the group consisting of a naked antibody, cytotoxic agent, a drug, a radionuclide, an immunomodulator, a photoactive therapeutic agent, an immunoconjugate of a CEA or non-CEA antibody, a hormone, antisense oligonucleotide or a combination thereof, optionally formulated in a pharmaceutically acceptable vehicle.

28. (Currently Amended) The method of claim 16, wherein said therapeutic agent is selected from the group consisting of a humanized, chimeric, human or murine monoclonal antibody or fragment thereof reactive with EGP-1, EGP-2 (e.g., 17-1A), IL-6, MUC-1, MUC-2, MUC-3, MUC-4, PAM-4, KC4, TAG-72, EGFR, ~~EGP-2,~~ HER2/neu, BrE3, Le-Y, A3, A33, Ep-CAM, AFP, Tn, Thomson-Friedenreich antigens, tumor necrosis antigens, VEGF, IL-6, insulin-like growth factor, placenta growth factor, tenascin, ~~fibronection~~ fibronectin, or other tumor angiogenesis antigens, Ga 733, and a combination thereof, and is administered to said subject either concurrently or sequentially in a therapeutically effective amount.

29. (Original) The method of claim 28, wherein said therapeutic agent is either a naked antibody or an antibody conjugated to another therapeutic agent.

30. (Original) The method of claim 16, wherein said therapeutic agent is not DTIC.

31. (Original) The method of claim 27, wherein said cytotoxic agent is a drug or a toxin.

32. (Original) The method of c laim 31, wherein said drug possesses the pharmaceutical property selected from the group consisting of antimitotic, alkylating, antimetabolite, antiangiogenic, apoptotic, alkaloid, COX-2, and antibiotic agents and combinations thereof.

33. (Original) The method of claim 31, wherein said drug is selected from the group consisting of nitrogen mustards, ethylenimine derivatives, alkyl sulfonates, nitrosoureas, triazenes, folic acid analogs, anthracyclines, taxanes, COX-2 inhibitors, pyrimidine analogs, purine analogs, antimetabolites, antibiotics, enzymes, epipodophyllotoxins, platinum coordination complexes, vinca alkaloids, substituted ureas, methyl hydrazine derivatives, adrenocortical suppressants, antagonists, endostatin, taxols, camptothecins, doxorubicins and their analogs, and a combination thereof.

34. (Currently Amended) The method of claim 31, wherein said toxin is a microbial, plant or animal toxin selected from the group consisting of ricin, abrin, alpha toxin, saporin, ribonuclease (RNase), DNase I, Staphylococcal enterotoxin-A, pokeweed antiviral protein, gelonin, ~~diphtherin~~ diphtheria toxin, Pseudomonas exotoxin, and Pseudomonas endotoxin.

35. (Original) The method of claim 27 wherein said immunomodulator is selected from the group consisting of a cytokine, a stem cell growth factor, a lymphotoxin, a hematopoietic factor, a colony stimulating factor (CSF), an interferon (IFN), a stem cell growth factor, erythropoietin, thrombopoietin and a combination thereof.

36. (Currently Amended) The method of claim 35, wherein said lymphotoxin is tumor necrosis factor (TNF), said hematopoietic factor is an interleukin (IL), said colony stimulating factor is granulocyte-colony stimulating factor (G-CSF) or granulocyte macrophage-colony stimulating factor (GM-CSF)[[)]], said interferon is interferons-α, -β or -γ, and said stem cell growth factor is

designated "S1 factor."[[.]]

37. (Original) The method of claim 27, wherein said immunomodulator comprises IL-1, IL-2, IL-3, IL-6, IL-10, IL-12, IL-18, interferon-γ, TNF-α or a combination thereof.

38. (Currently Amended) The method of claim 27, wherein said ~~radonuclide~~ radionuclide has an energy between 20 and 10,000 keV.

39. (Original) The method of claim 38, wherein said radionuclide is selected from the group consisting of ^{125}I, ^{131}I, ^{90}Y, ^{88}Y, ^{225}Ac, ^{177}Lu, ^{188}Re, ^{186}Re, and combinations thereof.

40. (Original) The method of claim 27, wherein said photoactive therapeutic agent is a chromogen or dye.

41. (Original) The method of claim 32, wherein said alkylating agent is dacarbazine.

42. (Original) The method of claim 21, wherein said MN-14 antibody or fragment thereof is administered in a dosage of 100 to 600 milligrams protein per dose per injection.

43. (Original) The method of claim 21, wherein said MN-14 antibody or fragment thereof is administered in a dosage of 300 to 400 milligrams protein per dose per injection.

44. (Original) A method for tre ating medullary thyroid carcinoma comprising administering to a subject, either concurrently or sequentially, a therapeutically effective amount of an anti-CEA monoclonal antibody or fragment thereof and at least one therapeutic agent, and optionally formulated in a pharmaceutically acceptable vehicle.

45. (Original) The method of claim 44, wherein said anti-CEA MAb is a Class I, Class II or Class III anti-CEA MAb.

46. (Currently Amended) The method of claim 44, wherein said anti-CEA MAb is a Class I or Class II anti-CEA ~~Mab~~ MAb which is reactive with granulocytes and is a monovalent form of the MAb.

47. (Currently Amended) The method of claim 44, wherein said anti-CEA MAb or fragment thereof is humanized, chimeric or fully human wherein said humanized, chimeric or fully human MAb retains substantially the anti-CEA binding specificity of a murine anti-CEA MAb.

48. (Original) The method of c laim 44, wherein said anti-CEA MAb or fragment thereof reacts with CEA and is unreactive with normal cross-reactive antigen (NCA) and meconium antigen (MA).

49. (Previously presented) The method of claim 44, wherein said anti-CEA MAb or fragment thereof is a humanized MN-14 antibody or fragment thereof comprising the complementarity-determining regions (CDRs) of a murine MN-14 monoclonal antibody, wherein the anti-CEA MAb comprises (1) the CDRs of the light chain variable region of said MN-14 antibody comprises CDR1 comprising the amino acid sequence KASQDVGTSVA (SEQ ID NO: 20); CDR2 comprising the amino acid sequence WTSTRHT (SEQ ID NO: 21); and CDR3 comprising the amino acid sequence QQYSLYRS (SEQ ID NO: 22); (2) the CDRs of the heavy chain variable region of said Class III anti-CEA antibody comprises CDR1 comprising TYWMS (SEQ ID NO: 23); CDR2 comprising EIHPDSSTINYAPSLKD (SEQ ID NO: 24); and CDR3 comprising LYFGFPWFAY (SEQ ID NO: 25) or the CDRs of both (1) and (2).

50. (Original) The method of claim 49, wherein the framework regions (FRs) of the light and heavy chain variable regions of said humanized MN-14 antibody or fragment thereof comprises at least one amino acid substituted from the corresponding FRs of a murine MN-14 monoclonal antibody.

51. (Original) The method of claim 50, wherein said humanized MN-14 antibody or fragment thereof comprises at least one amino acid from said corresponding FR of said murine MN-14 light chain or heavy chain variable region.

52. (Original) The method of claim 44, wherein said fragment is selected from the group consisting of $F(ab')_2$, Fab', Fab, Fv and scFv.

53. (Original) The method of claim 44, wherein said therapeutic agent is selected from the group consisting of humanized, chimeric, human or murine monoclonal antibody or fragment thereof

selected from the group consisting of a Class I anti-CEA monoclonal antibody, Class II anti-CEA monoclonal antibody, Class III anti-CEA monoclonal antibody, and a fragment thereof, and is administered either concurrently or sequentially in a therapeutically effective amount.

54. (Original) The method of claim 53, wherein said therapeutic agent is either a naked antibody or an antibody conjugated to another therapeutic agent.

55. (Currently Amended) The method of claim 44, wherein said therapeutic agent is selected from the group consisting of a naked antibody, cytotoxic agent, a drug, a radionuclide, an immunomodulator, a photoactive therapeutic agent, an immunoconjugate of a CEA or non-CEA antibody, a hormone, antisense oligonucleotide or a combination thereof, optionally formulated in a pharmaceutically acceptable vehicle.

56. (Currently Amended) The method of claim 44, wherein said therapeutic agent is selected from the group consisting of a humanized, chimeric, human or murine monoclonal antibody or fragment thereof reactive with EGP-1, EGP-2 (e.g., 17-1A), IL-6, MUC-1, MUC-2, MUC-3, MUC-4, PAM-4, KC4, TAG-72, EGFR, ~~EGP-2,~~ HER2/neu, BrE3, Le-Y, A3, A33, Ep-CAM, AFP, Tn, Thomson-Friedenreich antigens, tumor necrosis antigens, VEGF, IL-6, insulin-like growth factor, placenta growth factor, tenascin, ~~fibronection~~ fibronectin, or other tumor angiogenesis antigens, Ga 733, and a combination thereof, and is administered to said subject either concurrently or sequentially in a therapeutically effective amount.

57. (Original) The method of claim 56, wherein said therapeutic agent is either a naked antibody or an antibody conjugated to another therapeutic agent.

58. (Original) The method of claim 44, wherein said therapeutic agent is not DTIC.

59. (Original) The method of claim 55, wherein said cytotoxic agent is a drug or a toxin.

60. (Original) The method of claim 59, wherein said drug possesses the pharmaceutical property selected from the group consisting of antimitotic, alkylating, antimetabolite, antiangiogenic, apoptotic, alkaloid, COX-2, and antibiotic agents and combinations thereof.

61. (Original) The method of claim 59, wherein said drug is selected from the group consisting of nitrogen mustards, ethylenimine derivatives, alkyl sulfonates, nitrosoureas, triazenes, folic acid analogs, anthracyclines, taxanes, COX-2 inhibitors, pyrimidine analogs, purine analogs, antimetabolites, antibiotics, enzymes, epipodophyllotoxins, platinum coordination complexes, vinca alkaloids, substituted ureas, methyl hydrazine derivatives, adrenocortical suppressants, antagonists, endostatin, taxols, camptothecins, doxorubicins and their analogs, and a combination thereof.

62. (Currently Amended) The method of claim 59, wherein said toxin is a microbial, plant or animal toxin selected from the group consisting of ricin, abrin, alpha toxin, saporin, ribonuclease (RNase), DNase I, Staphylococcal enterotoxin-A, pokeweed antiviral protein, gelonin, ~~diphtherin~~ diphtheria toxin, Pseudomonas exotoxin, and Pseudomonas endotoxin.

63. (Original) The method of claim 55, wherein said immunomodulator is selected from the group consisting of a cytokine, a stem cell growth factor, a lymphotoxin, a hematopoietic factor, a colony stimulating factor (CSF), an interferon (IFN), a stem cell growth factor, erythropoietin, thrombopoietin and a combination thereof.

64. (Currently Amended) The method of claim 63, wherein said lymphotoxin is tumor necrosis factor (TNF), said hematopoietic factor is an interleukin (IL), said colony stimulating factor is granulocyte-colony stimulating factor (G-CSF) or granulocyte macrophage-colony stimulating factor (GM-CSF)[[)]], said interferon is interferons-α, -β or -γ, and said stem cell growth factor is designated "S1 factor".

65. (Original) The method of claim 55, wherein said immunomodulator comprises IL-1, IL-2, IL-3, IL-6, IL-10, IL-12, IL-18, interferon-γ, TNF-α or a combination thereof.

66. (Original) The method of claim 55, wherein said radonuclide has an energy between 20 and 10,000 keV.

67. (Original) The method of claim 66, wherein said radionuclide is selected from the group consisting of 125I, 131I, 90Y, 88Y, 225Ac, 177Lu, 188Re, 186Re, and combinations thereof.

68. (Original) The method of claim 55 , wherein said photoactive therapeutic agent is a chromogen

or dye.

69. (Original) The method of claim 60, wherein said alkylating agent is dacarbazine.

70. (Original) The method of claim 49, wherein said MN-14 antibody or fragment thereof is administered in a dosage of 100 to 600 milligrams protein per dose per injection.

71. (Original) The method of claim 49, wherein said MN-14 antibody or fragment thereof is administered in a dosage of 300 to 400 milligrams protein per dose per injection.

72. (Original) A method for tre ating cancer comprising administering to a subject, either concurrently or sequentially, a therapeutically effective amount of an anti-CEA antibody or fragment thereof and at least one therapeutic agent, and optionally formulated in a pharmaceutically acceptable vehicle.

73. (Original) The method of claim 72, wherein the therapeutic agent is CPT-11.

74. (Original) The method of claim 72, wherein the anti-CEA antibody or fragment is administered prior to administration of CPT-11.

75. (Original) The method of claim 72, wherein the anti-CEA antibody or fragment is administered around 3 days prior to administration of CPT-11.

76. (Original) The method of claim 72, wherein the therapeutic agent is DTIC.

77. (Original) The method of claim 72, wherein the therapeutic agent is oxaliplatin.

78. (Original) The method of claim 72, wherein the therapeutic agent is 5-flourouracil/leucovorin.

79. (Original) I n a method of treating cancer with a non-antibody therapeutic agent, the improvement comprising pre-treating a subject suffering from cancer with an anti-CEA antibody or a fragment thereof prior to administration of the non-antibody therapeutic agent.

80. (Original) The method of claim 79, wherein the anti-CEA antibody is hMN-14.

81. (Original) The method of claim 79, wherein the therapeutic agent is CPT-11.

82. (Original) A method of treating cancer with an antibody comprising administering to a subject suffering from cancer, prior to administration of the antibody, an agent that activates granulocytes and/or NK cells in order to increase effector function of the antibody.

83. (Original) The method of claim 82, wherein the agent is GM-CSF.

84. (Original) The method of claim 82, wherein the antibody is an anti-CEA antibody.

85. (Original) The method of claim 82, wherein the antibody is hMN-14.

86. (Original) A method of treating cancer with an anti-CEA antibody or fragment, comprising administering to a subject suffering from cancer, prior to administration of the anti-CEA antibody or fragment, an amount of interferon effective to upregulate CEA expression in tumor cells.

87. (Original) The method of claim 86, wherein the anti-CEA antibody is hMN-14.

88. (Original) An antibody fusion protein comprising at least one CEA binding site and at least one other binding site for the same or different antigen.

89. (Original) The antibody fusion protein of claim 88, wherein the CEA binding site binds to the same site as a Class I, II or III anti-CEA antibody.

90. (Original) The antibody fusion protein of claim 88, wherein the CEA binding site binds to the same site as a Class III anti-CEA antibody.

91. (Original) The antibody fusion protein of claim 88, which is bivalent or trivalent.

92. (Currently Amended) The antibody fusion protein of claim 88, wherein one arm of the fusion protein is a Class III, anti-CEA ~~mAb~~ MAb that targets CD66e and another arm of the fusion

protein is from another anti-CEA cross-reactive antibody that targets CD66a-d.

93. (Original) The antibod y fusion protein of claim 88, wherein the binding sites are scFv or Fab regions.

94. (Original) An antibod y fusion protein of claim 88, which is a bispecific, trivalent protein comprising one arm reactive with NCA50/90 and two arms reactive with only CEA.

95. (Original) An antibod y fusion protein of claim 88, which is a bispecific protein comprising two arms that bind to NCA50/90.

96. (Original) An antibod y fusion protein of claim 88, which is a diabody comprising one arm that binds to NCA50/90 and a second arm that binds to a Class III epitope of CEA.

97. (Original) An antibod y fusion protein of claim 96, wherein the NCA-50/90 arm is obtained from an hMN-3 antibody and the second arm that binds to a Class III epitope of CEA is obtained from hMN-14.

98. (Original) An antibod y fusion protein of claim 97, wherein the fusion protein lacks an Fc-domain to prevent activation of cytokine release from granulocytes or which has an Fc-domain that has been modified to prevent complement fixation and ADCC.

99. (Original) An antibod y fusion protein of claim 98, which is a triabody comprising one hMN-3 arm and two hMN14 arms.

100. (Original)An antibody fusion protein of claim 88, which is a triabody comprising one hMN-15 arm and two hMN14 arms.

101. (Original)An antibody fusion protein of claim 88 comprising at least one hMN-14 arm and at least one MN-6 arm.

102. (Original)An antibody fusion protein of claim 101, which comprises an Fc-domain to enable complement fixation and activation of ADCC.

103. (Original)An antibody fusion protein of claim 98, further comprising a therapeutic agent.

104. (Original)An antibody fusion protein of claim 103, wherein the therapeutic agent is a cytokine.

105. (Original)An antibody fusion protein of claim 104, wherein the cytokine is interferon, a colony-stimulating factor, or an interleukin.

106. (Original)An antibody fusion protein of claim 105, wherein the colony-stimulating factor is GM-CSF or G-CSF.

107. (New) The composition of claim 5, wherein said anti-CEA MAb or fragment thereof is a chimeric MN-14 antibody or fragment thereof comprising the complementarity-determining regions (CDRs) of a murine MN-14 monoclonal antibody, wherein the anti-CEA MAb comprises (1) the CDRs of the light chain variable region of said MN-14 antibody comprises CDR1 comprising the amino acid sequence KASQDVGTSVA (SEQ ID NO: 20); CDR2 comprising the amino acid sequence WTSTRHT (SEQ ID NO: 21); and CDR3 comprising the amino acid sequence QQYSLYRS (SEQ ID NO: 22); (2) the CDRs of the heavy chain variable region of said Class III anti-CEA antibody comprises CDR1 comprising TYWMS (SEQ ID NO: 23); CDR2 comprising EIHPDSSTINYAPSLKD (SEQ ID NO: 24); and CDR3 comprising LYFGFPWFAY (SEQ ID NO: 25) or the CDRs of both (1) and (2).